

FIG.1

DESCRIPTION OF 4-BIT
GRAY CODE

DECIMAL CODE	BINARY CODE ADR<3~0>	GRAY CODE GADR<3~0>	• CARRY
0	<3> <2> <1> <0> • • • • 0 0 0 0	<3> <2> <1> <0> 0 0 0 0	
1	0 0 0 1 • • •	0 0 0 1	•
2	0 0 1 0 • • •	0 0 1 1	1
3	0 0 1 1 • • •	0 0 1 0	0
4	0 1 0 0 • • •	0 1 1 0	•
5	0 1 0 1 • • •	0 1 1 1	1
6	0 1 1 0 • • •	0 1 0 1	•
7	0 1 1 1 • • • •	0 1 0 0	0
8	1 0 0 0 • • •	1 1 0 0	•
9	1 0 0 1 • • •	1 1 0 1	1
10	1 0 1 0 • • •	1 1 1 1	•
11	1 0 1 1 • • •	1 1 1 0	0
12	1 1 0 0 • • •	1 0 1 0	•
13	1 1 0 1 • • •	1 0 1 1	1
14	1 1 1 0 • • •	1 0 0 1	•
15	1 1 1 1 • • • •	1 0 0 0	0

FIG.2

EXPRESSION CONVERTING 4-BIT GRAY CODE INTO 4-BIT BINARY CODE

BINARY CODE ADR<3~0>		GRAY CODE GADR<3~0>
ADR<3>	=	GADR<3>
ADR<2>	=	Exor(GADR<3>,GADR<2>)
ADR<1>	=	Exor(GADR<3>~GADR<1>)
ADR<0>	=	Exor(GADR<3>~GADR<0>)

FIG.3

EXPRESSION CONVERTING N-BIT GRAY CODE INTO N-BIT BINARY CODE

BINARY CODE ADR<n-1~0>		GRAY CODE GADR<n-1~0>
ADR<n-1>	=	GADR<n-1>
ADR<n-2>	=	Exor(GADR<n-1>, GADR<n-2>)
ADR<n-3>	=	Exor(GADR<n-1>~GADR<n-3>)
ADR<0>	=	Exor(GADR<n-1>~GADR<0>)

FIG.4

EXEMPLARY LOCATION OF CARRY OF 4-BIT GRAY CODE

DECIMAL CODE	BINARY CODE	GRAY CODE
5	0 1 0 1	0 1 1 1
.		
6	0 1 1 0	0 1 0 1
7	0 1 1 1	0 1 0 0

FIG.5

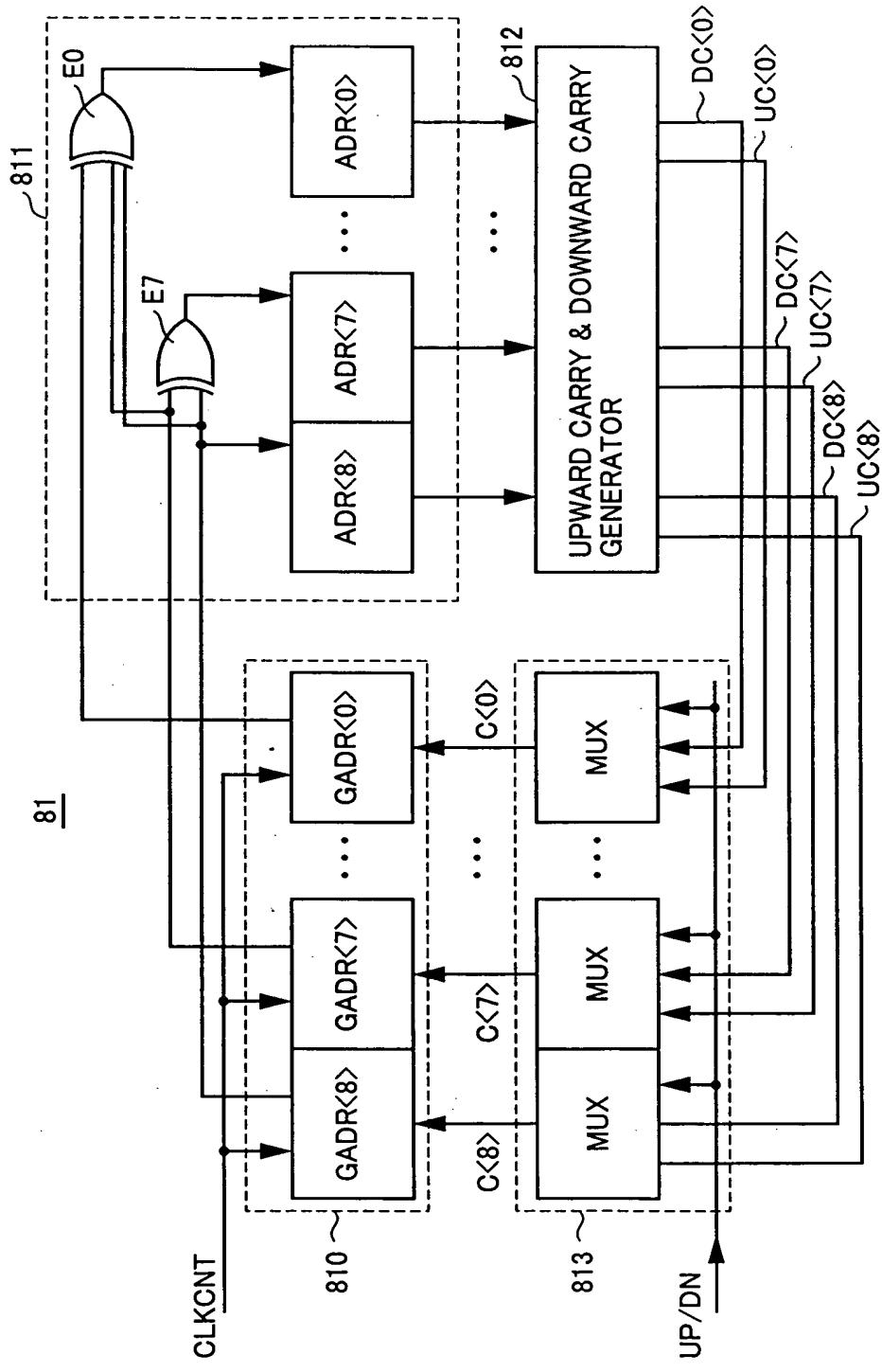


FIG.6

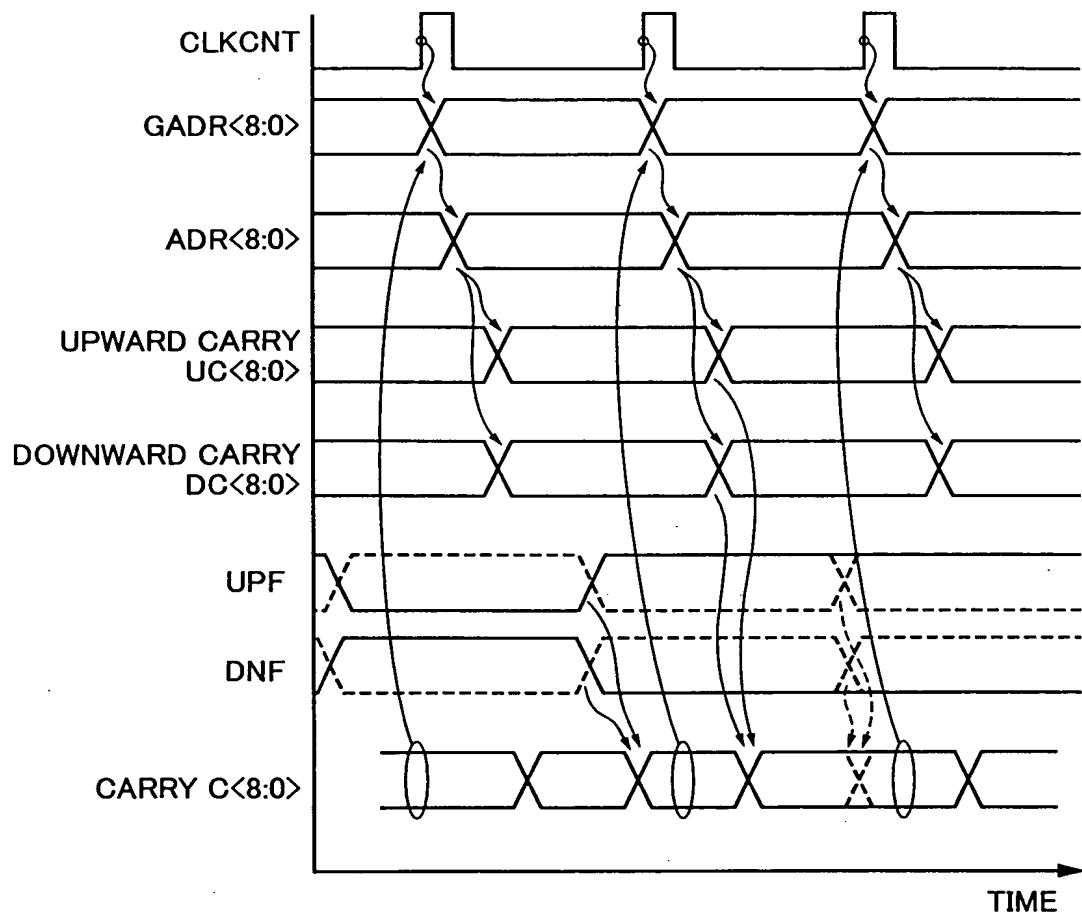


FIG. 7

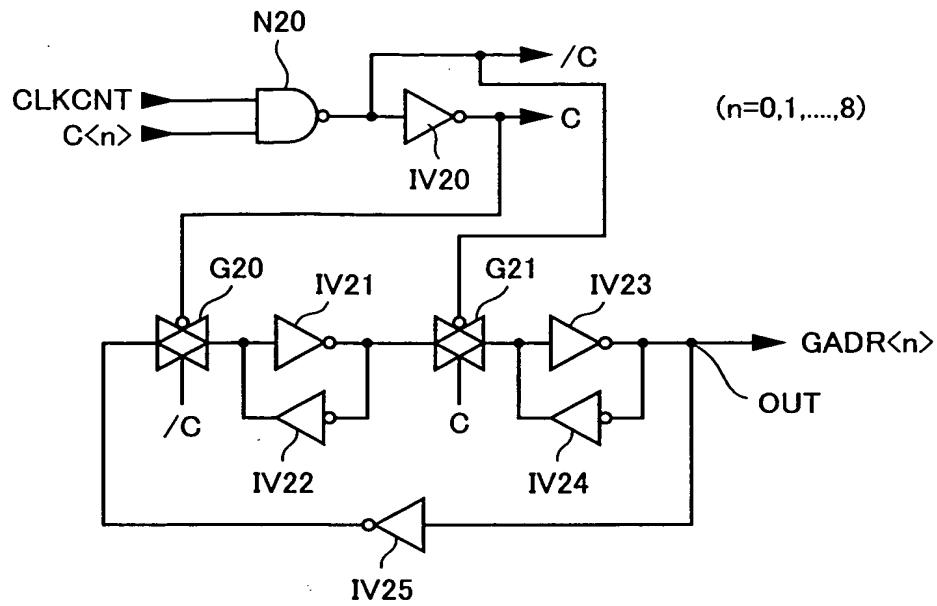


FIG.8

811

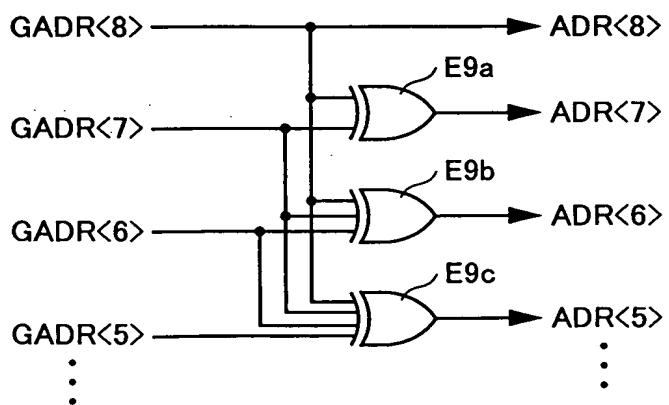


FIG.9

1000
CLKext

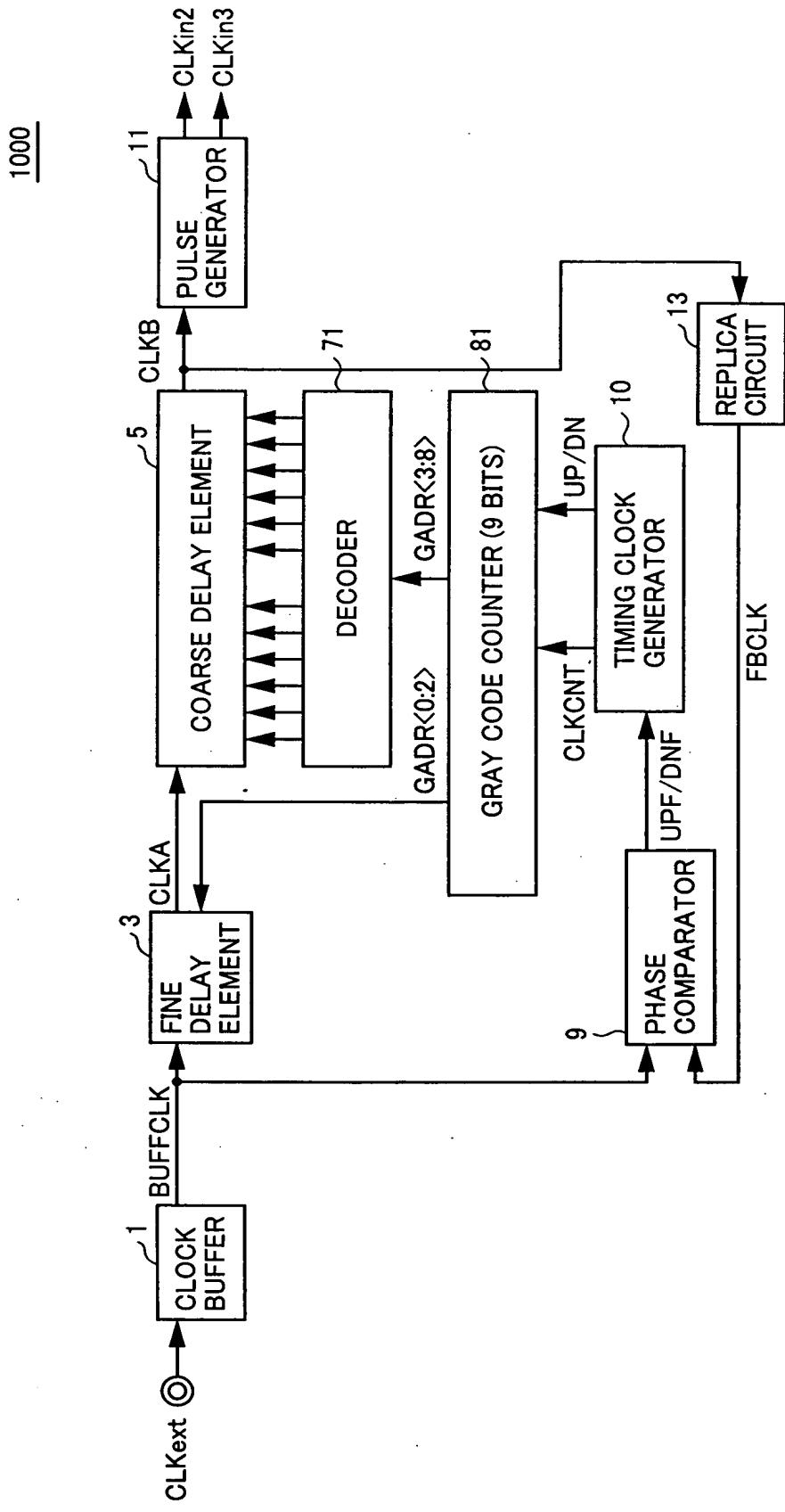


FIG.10

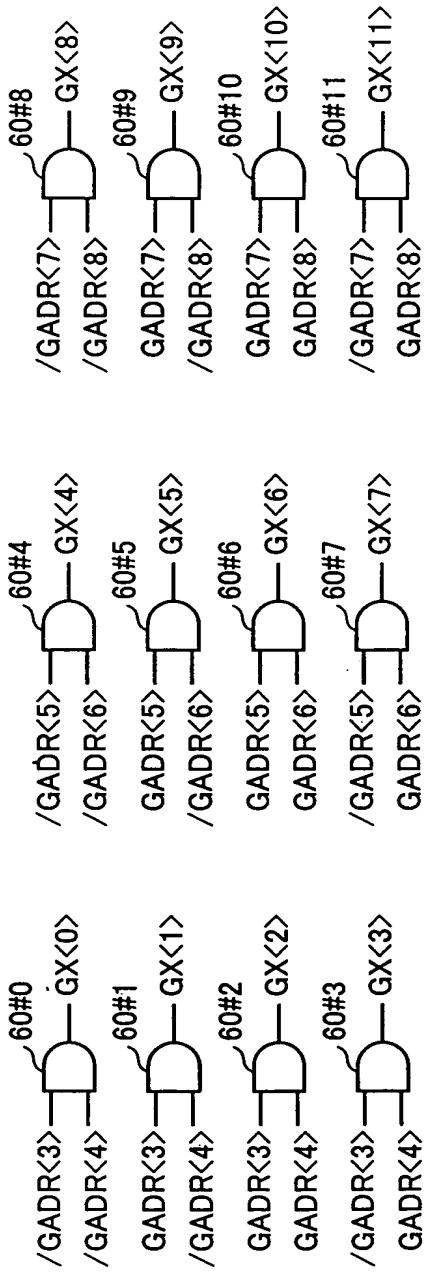


FIG.11

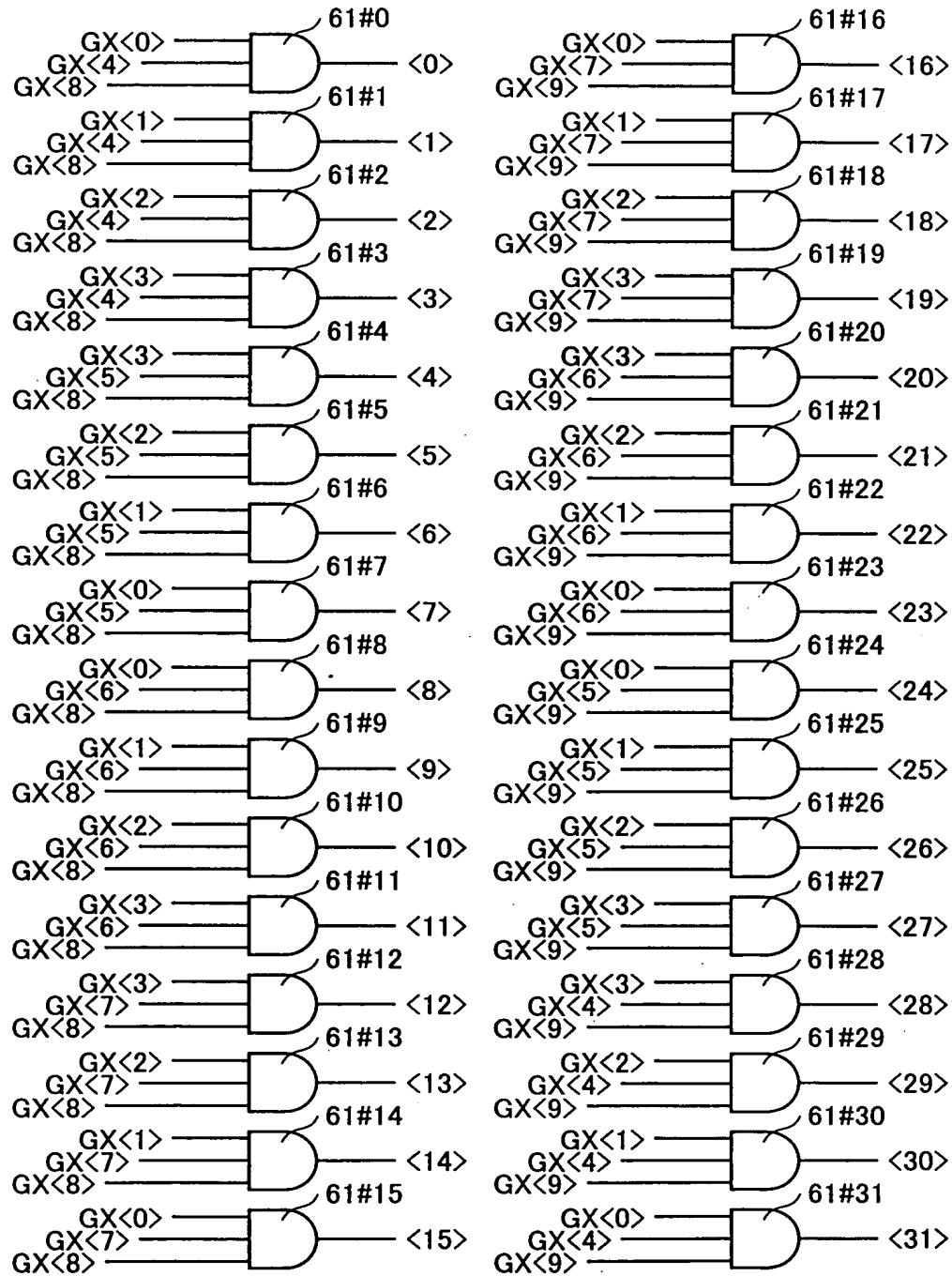


FIG.12

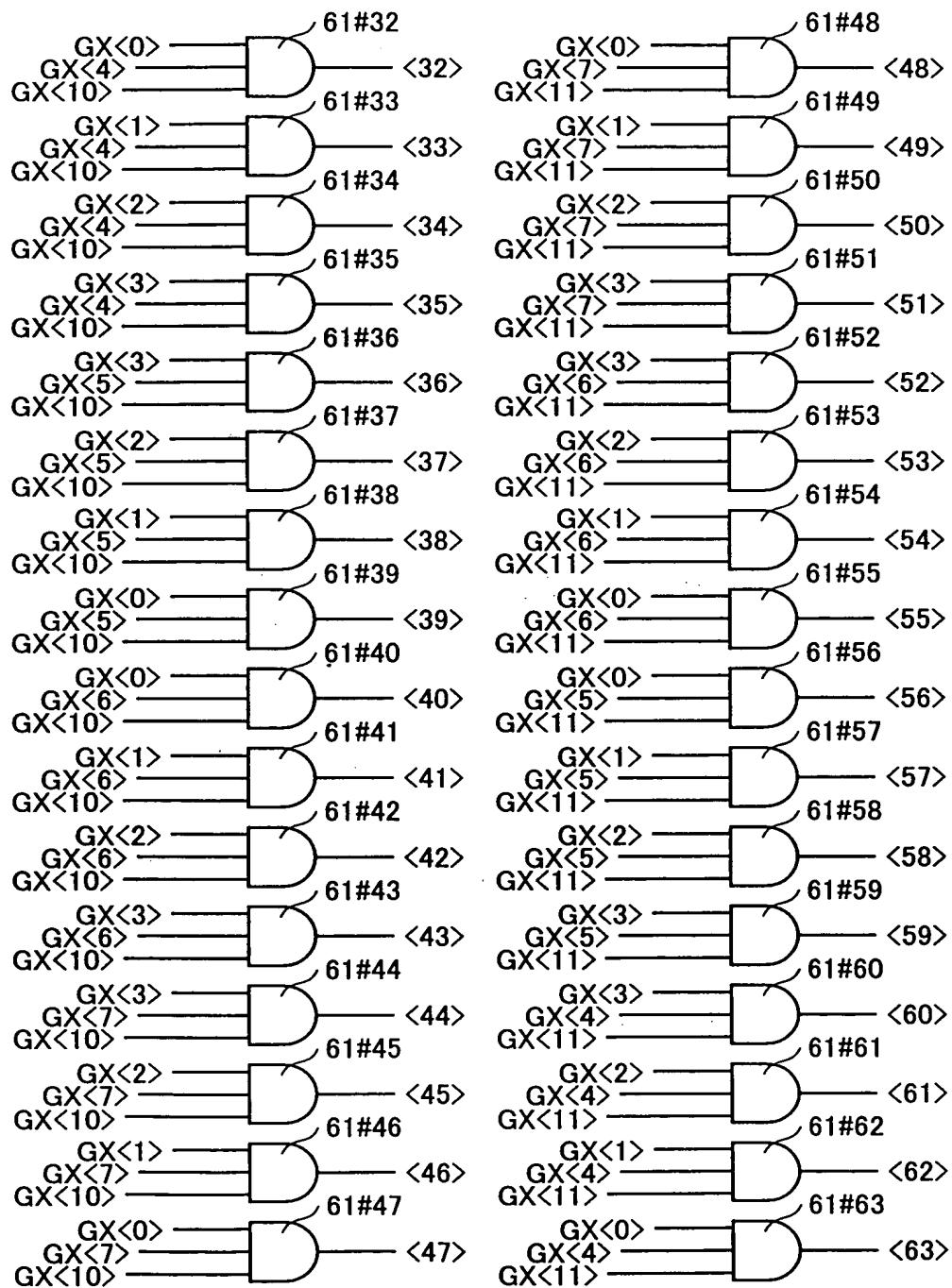


FIG.13

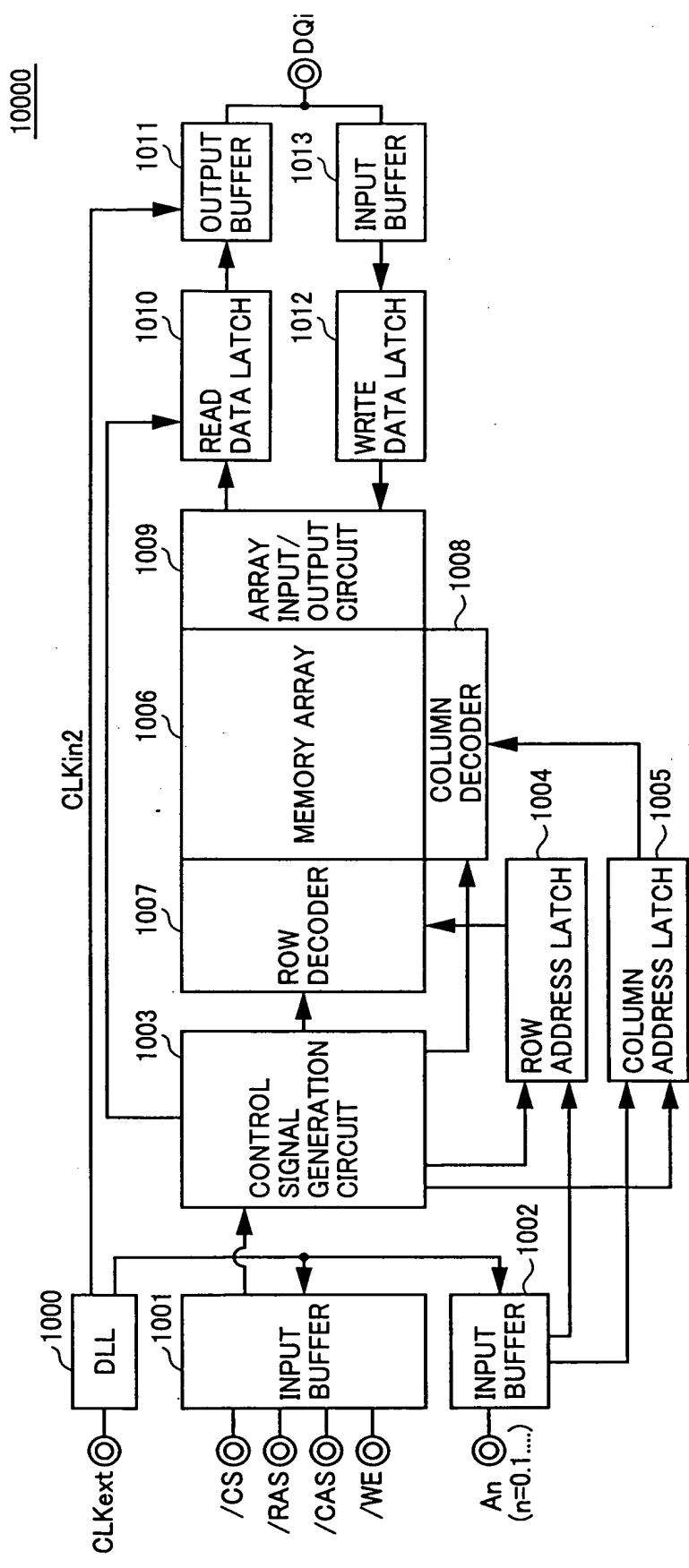


FIG. 14

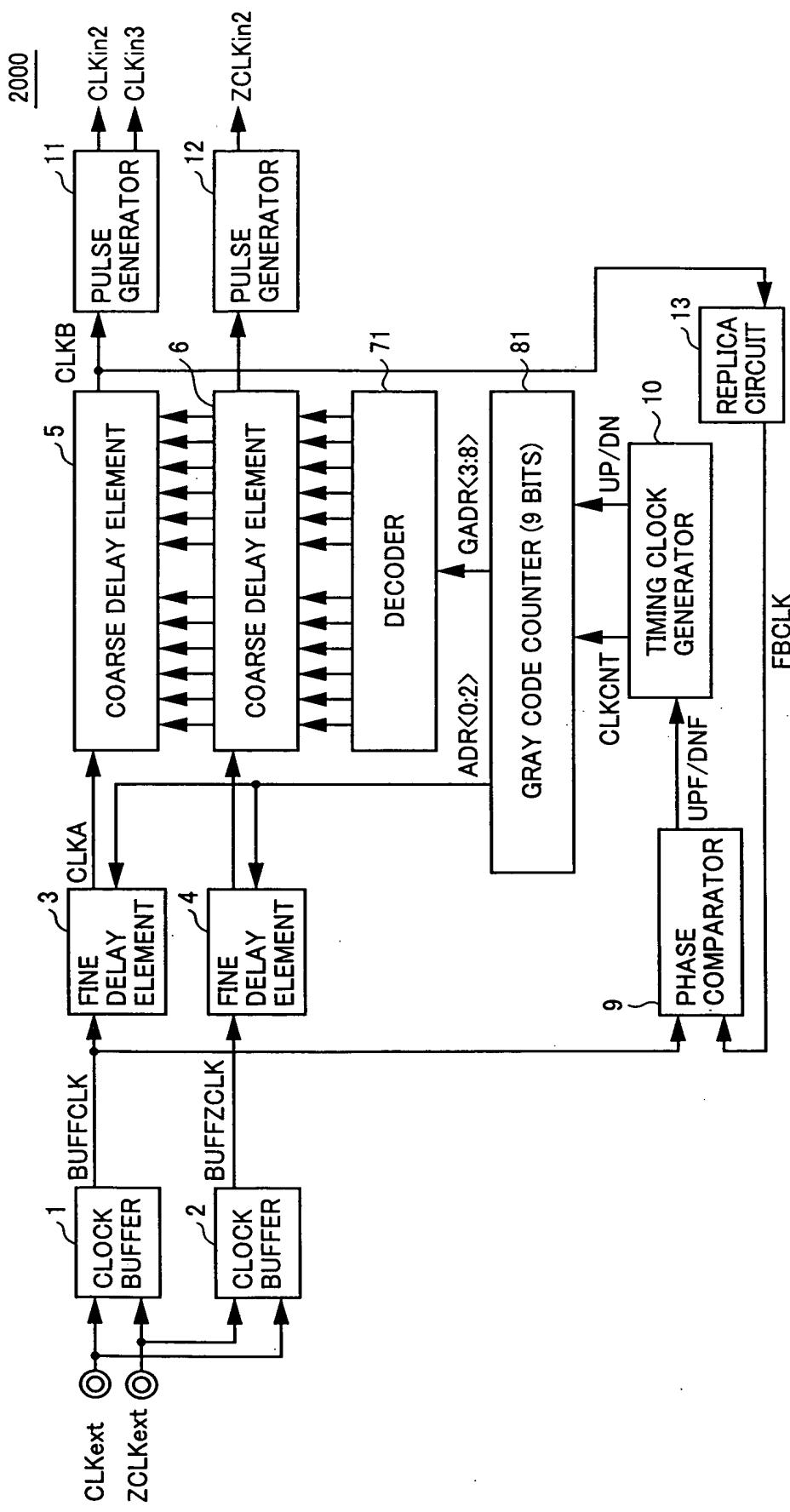


FIG.15

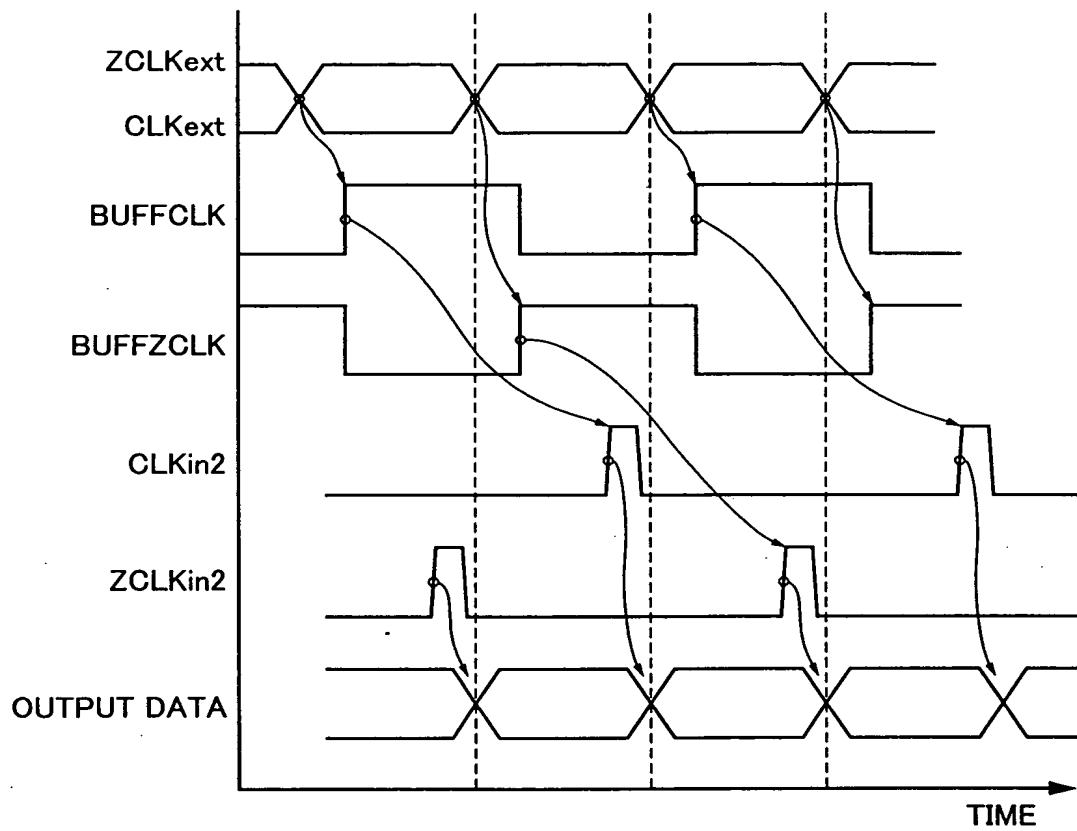


FIG.16

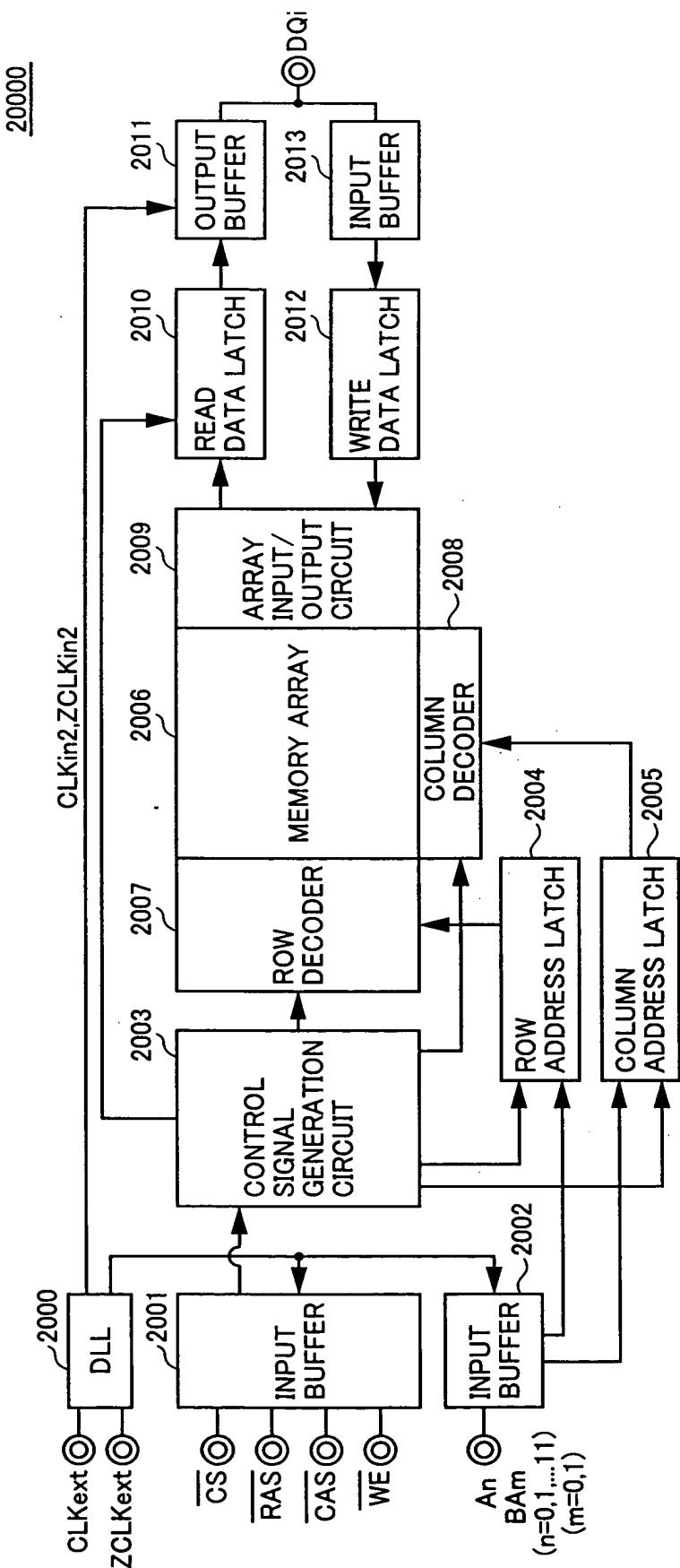


FIG.17 PRIOR ART

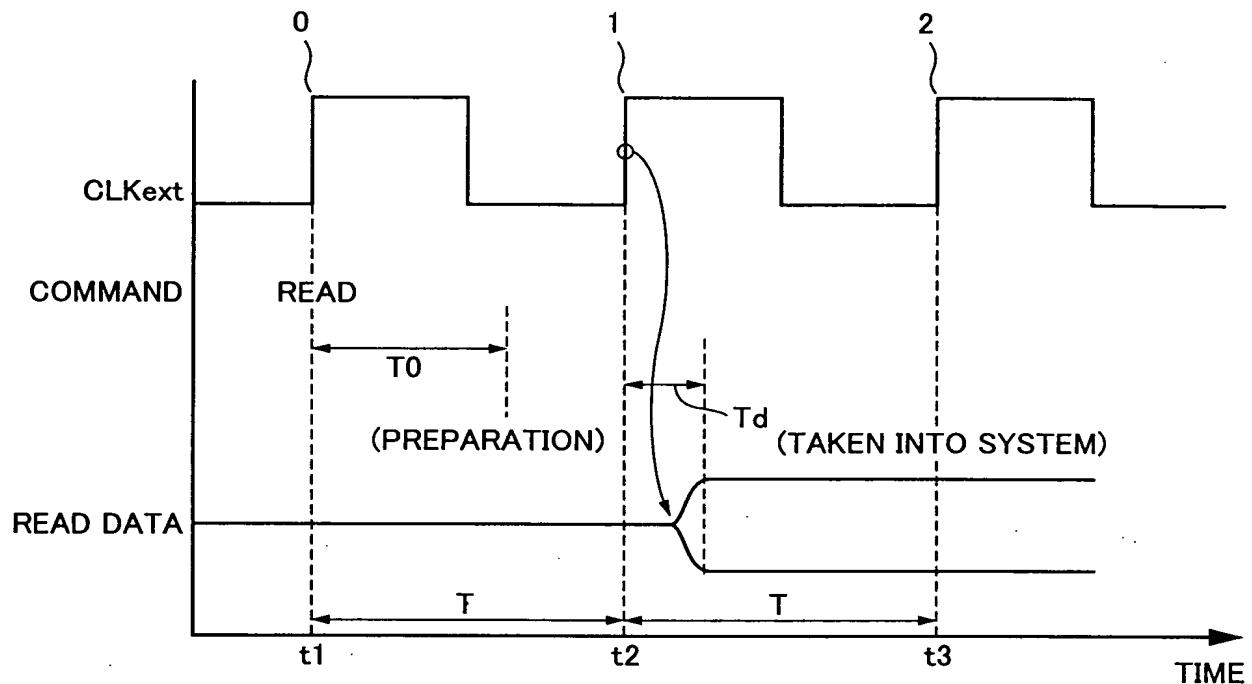
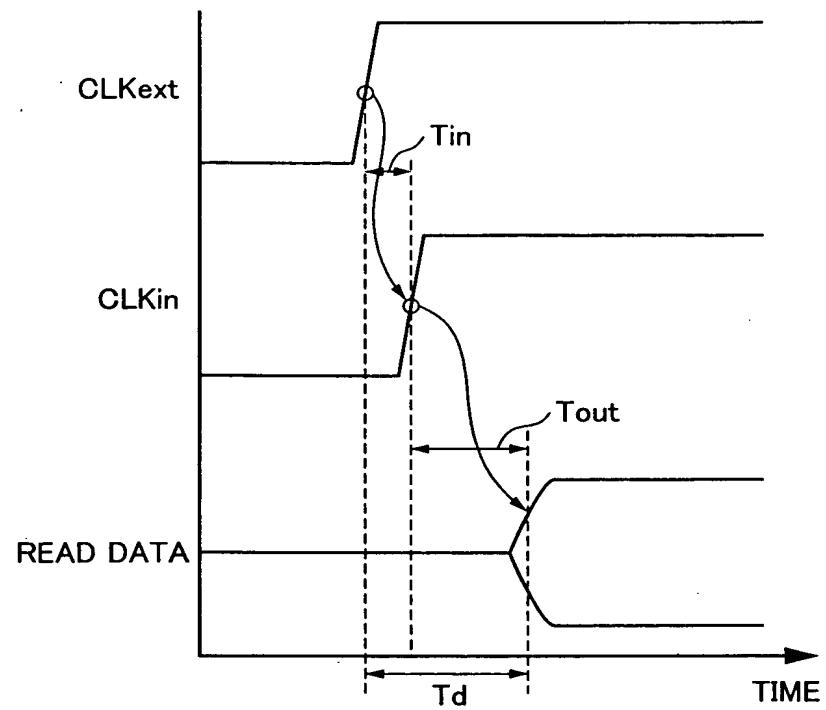


FIG.18 PRIOR ART



TOP SECRET//SI 2022-06-01

FIG.19 PRIOR ART

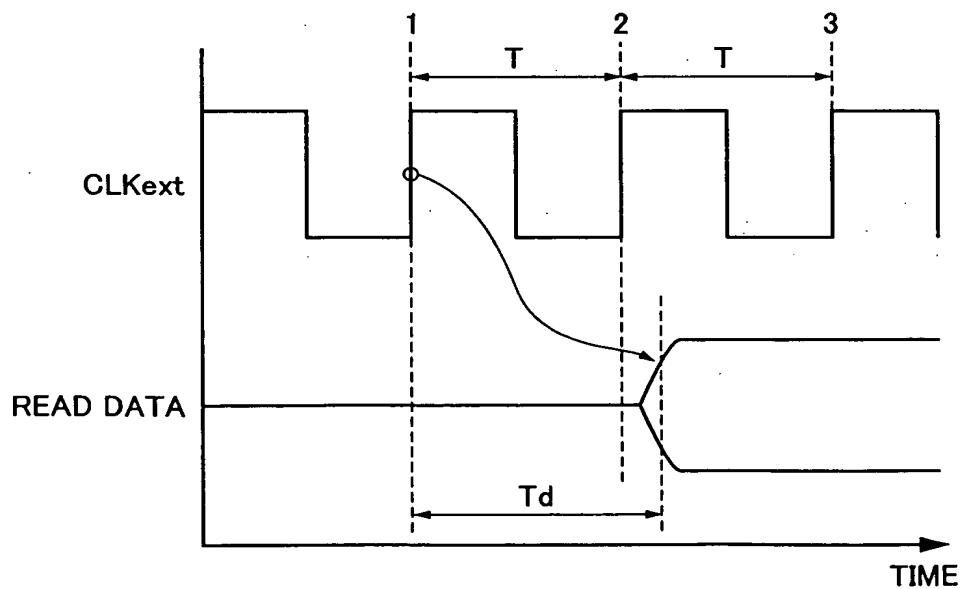


FIG.20 PRIOR ART

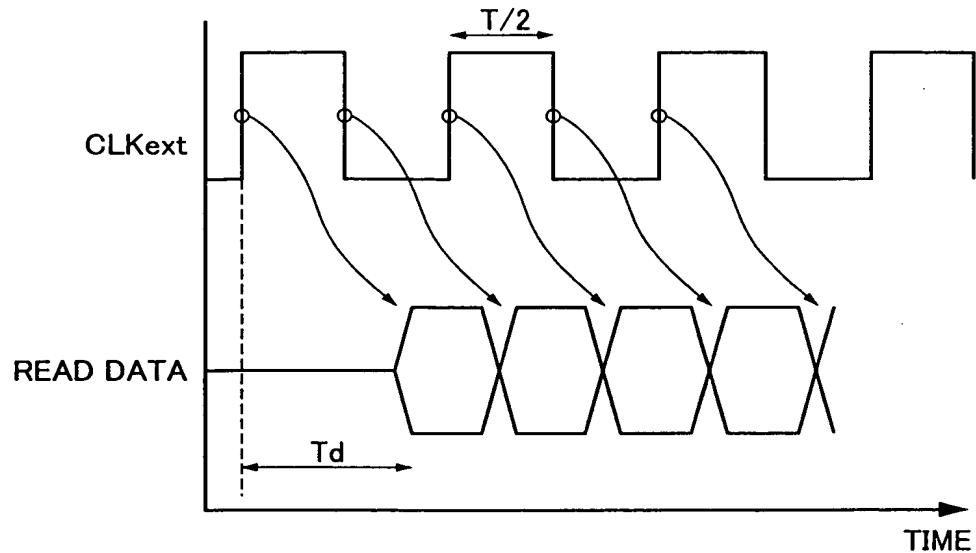


FIG.21 PRIOR ART

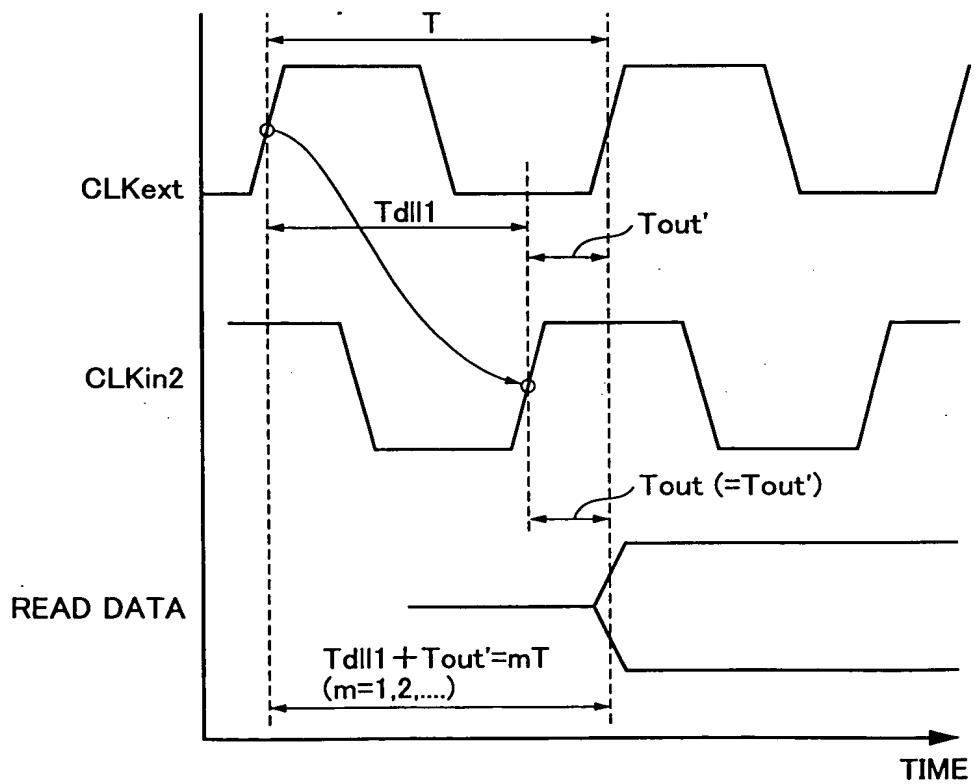


FIG.22 PRIOR ART

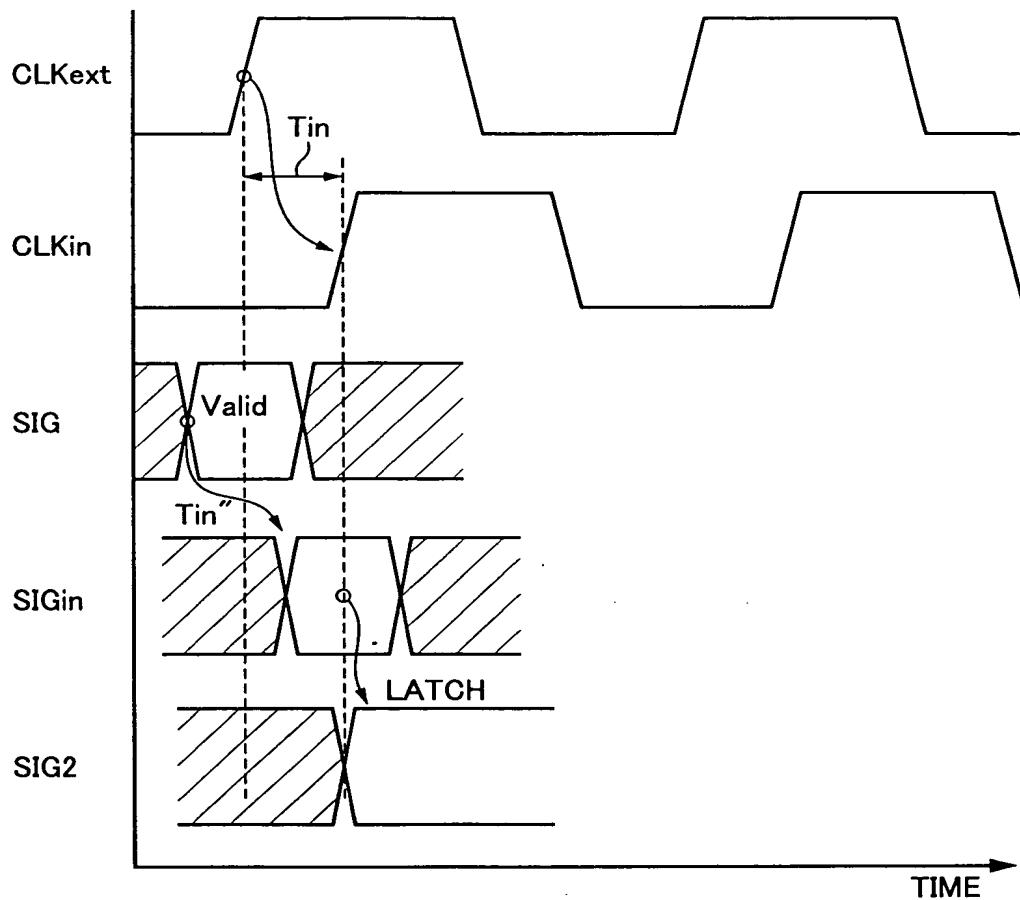


FIG.23 PRIOR ART

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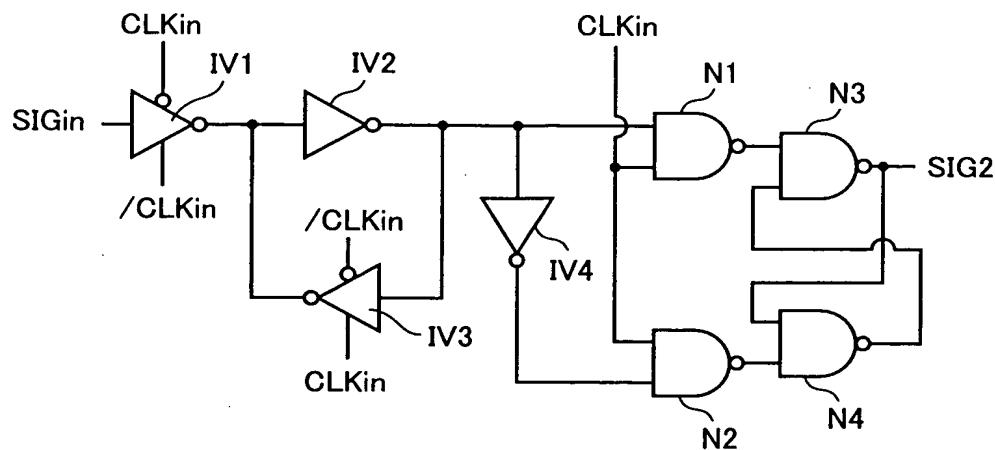


FIG.24 PRIOR ART

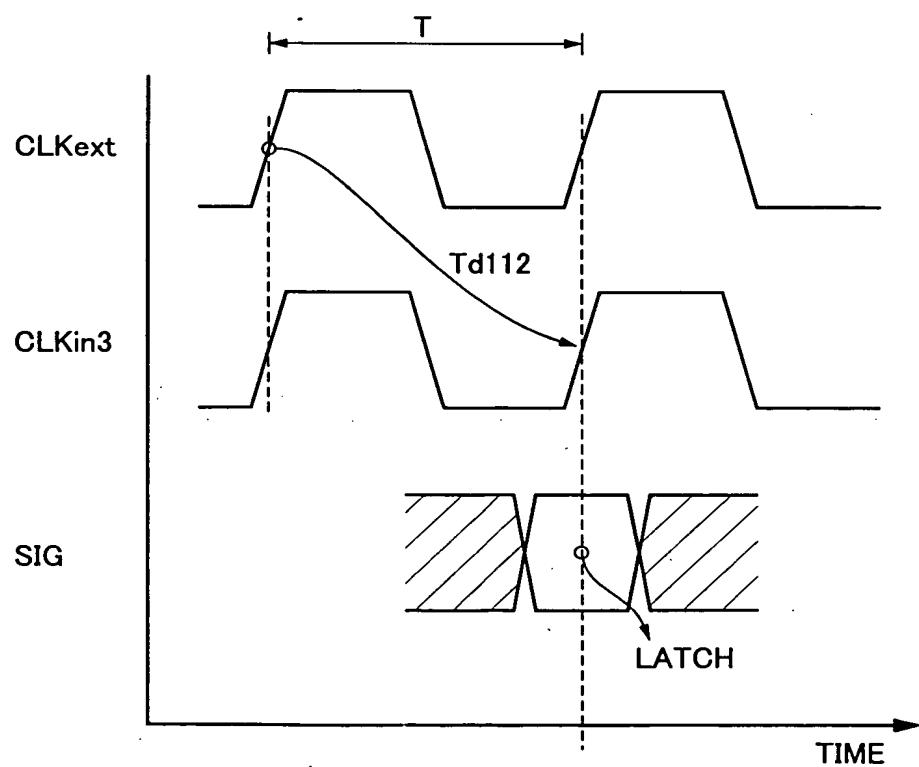


FIG. 25 PRIOR ART

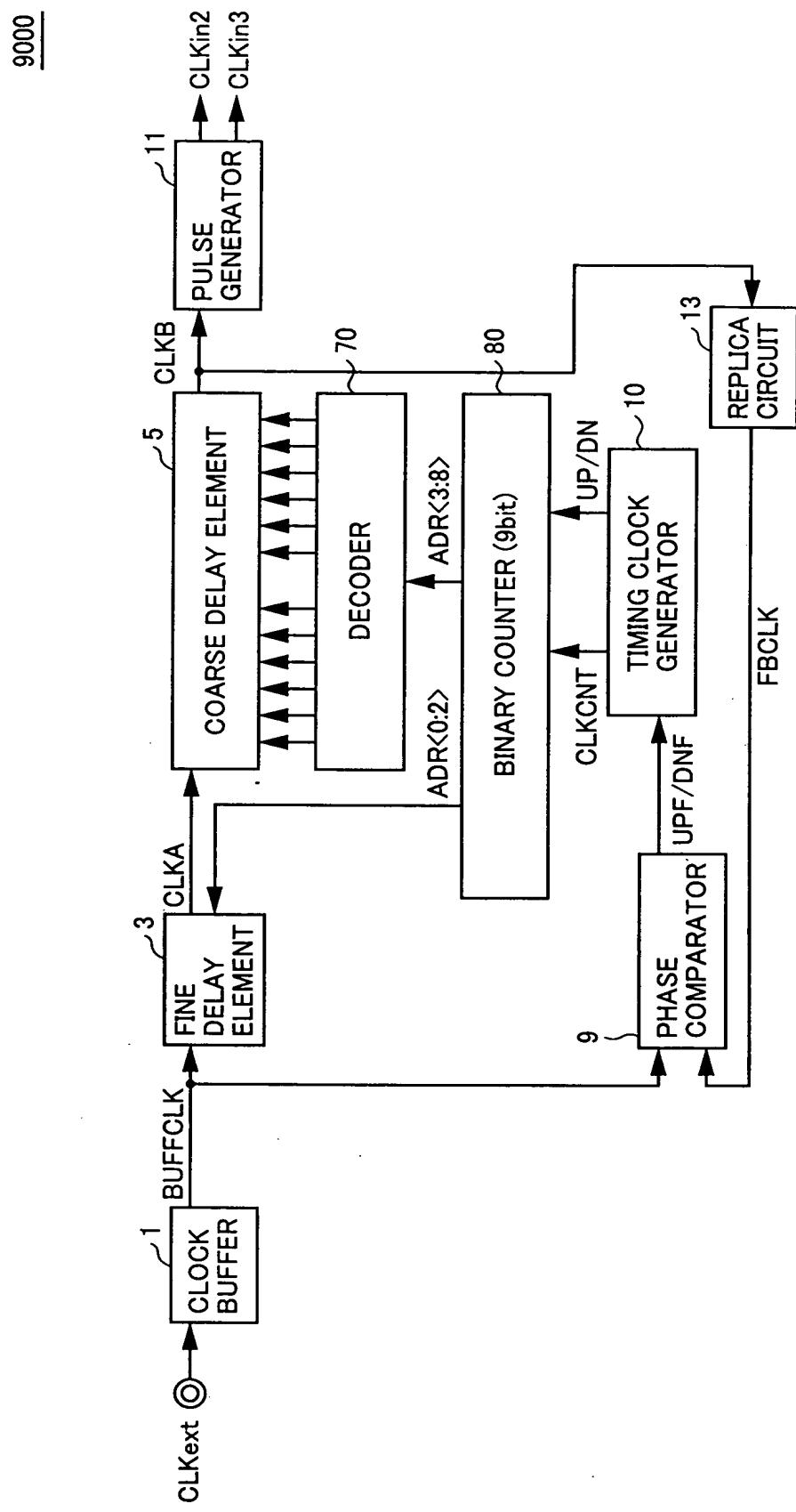


FIG.26 PRIOR ART

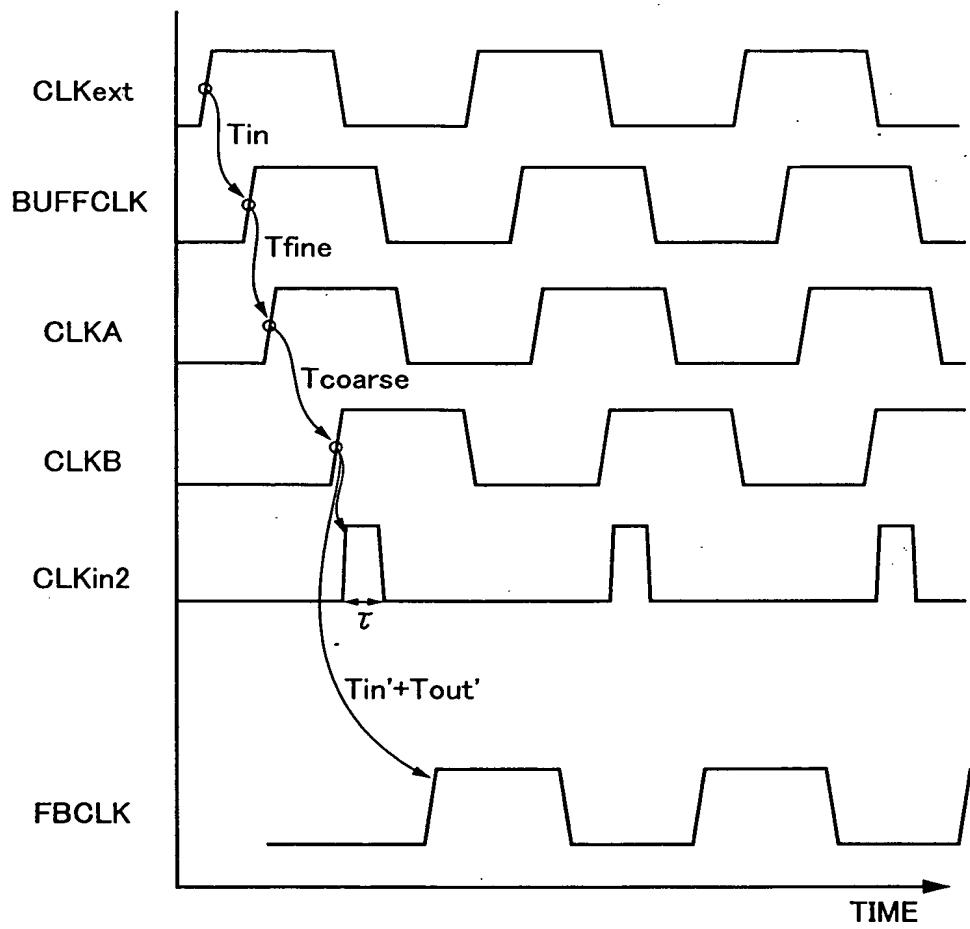
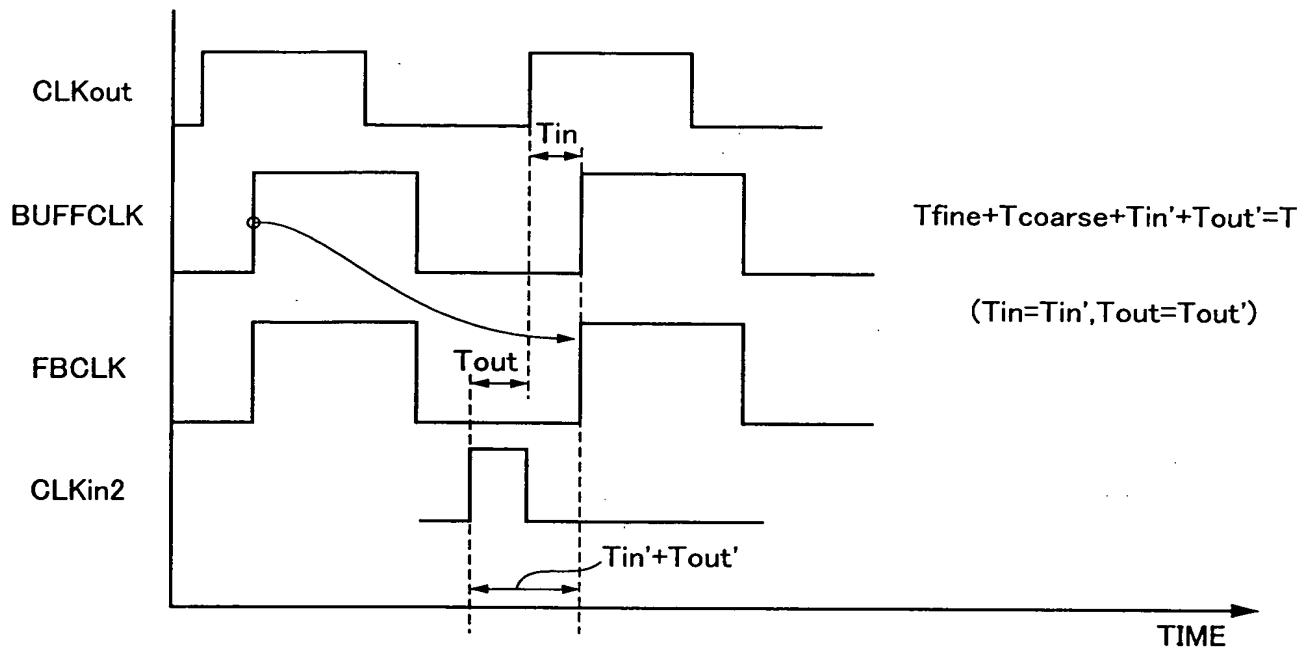


FIG.27 PRIOR ART



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FIG.28A PRIOR ART

UP (UPF="H", DNF="L")

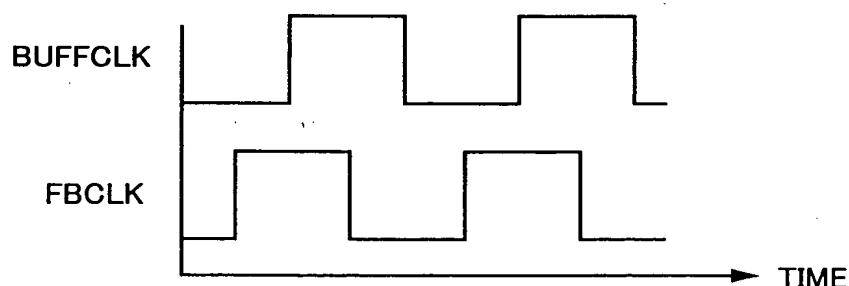


FIG.28B PRIOR ART

DOWN (DNF="H", UPF="L")

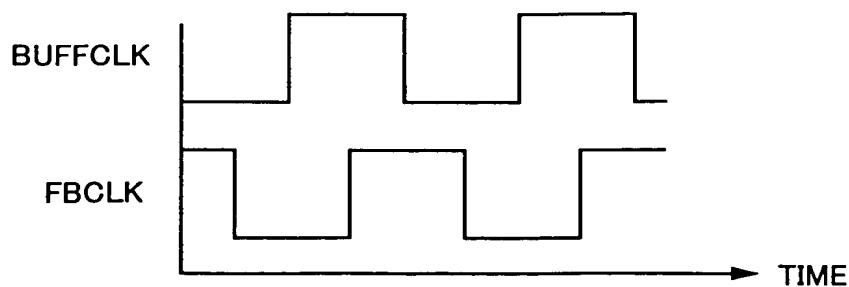


FIG.29 PRIOR ART

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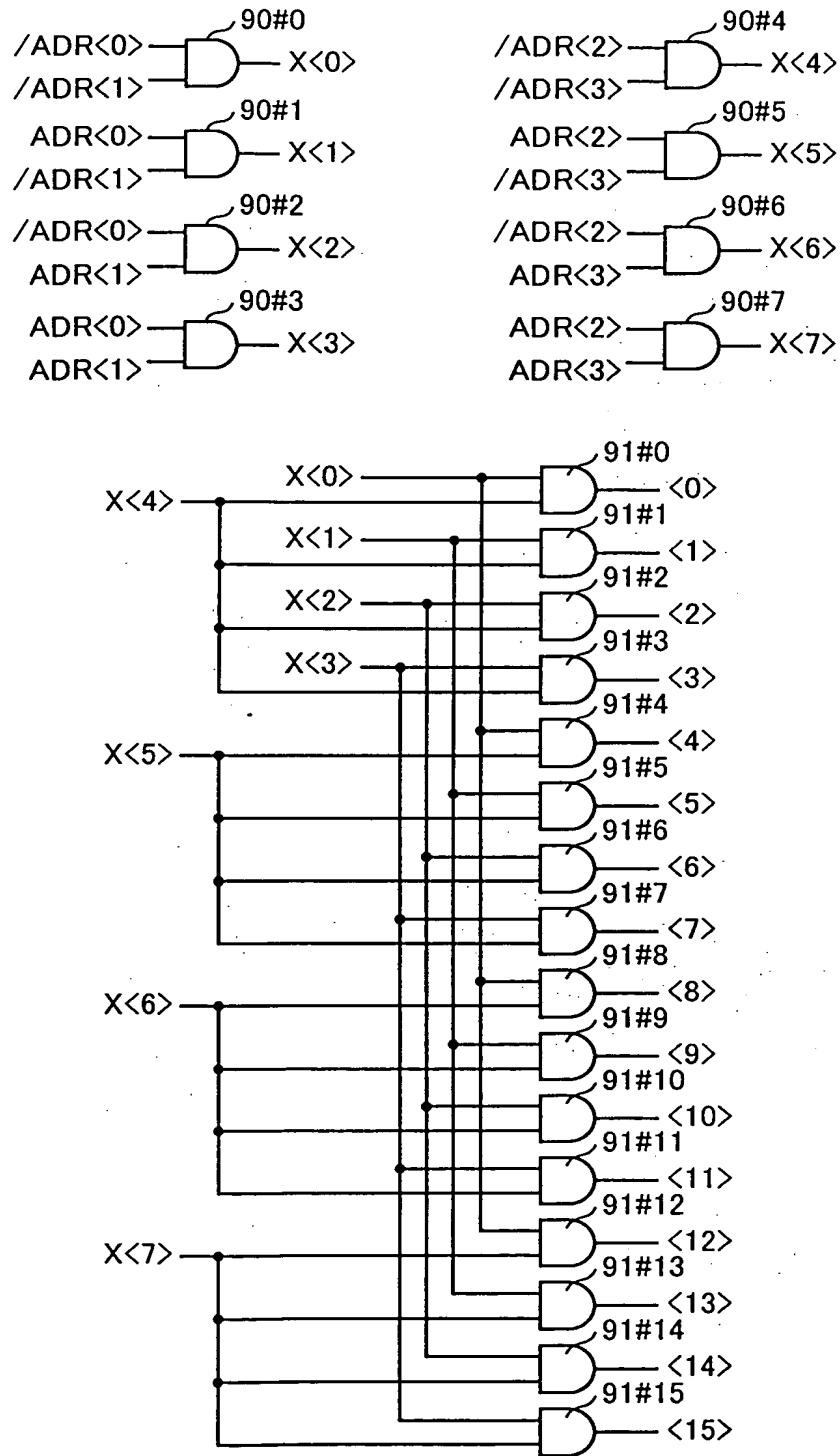


FIG.30 PRIOR ART

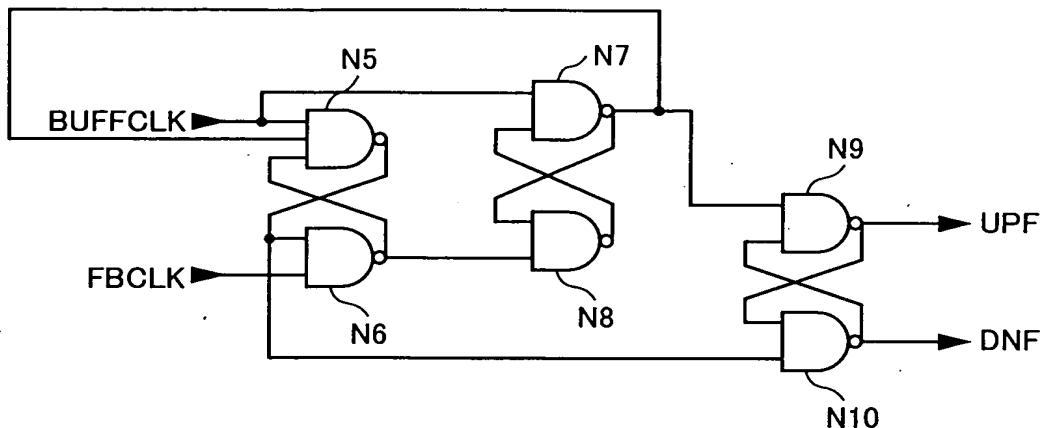


FIG.31

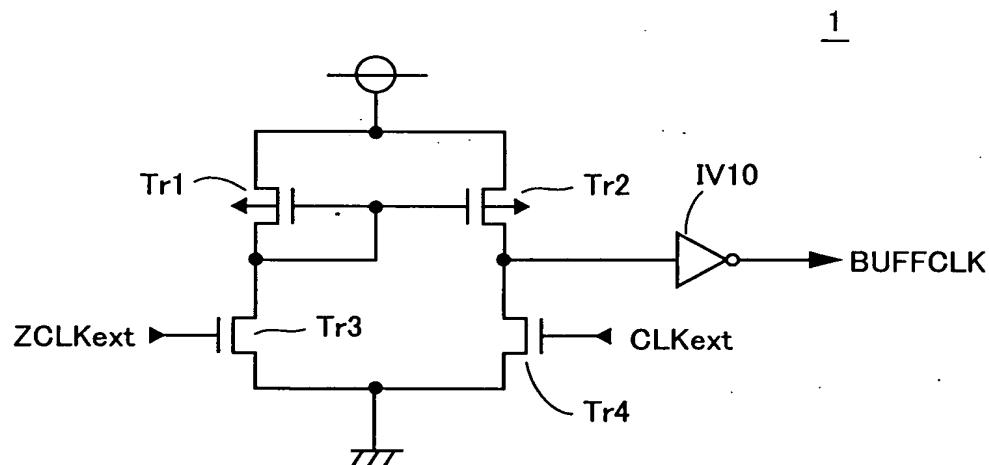


FIG.32

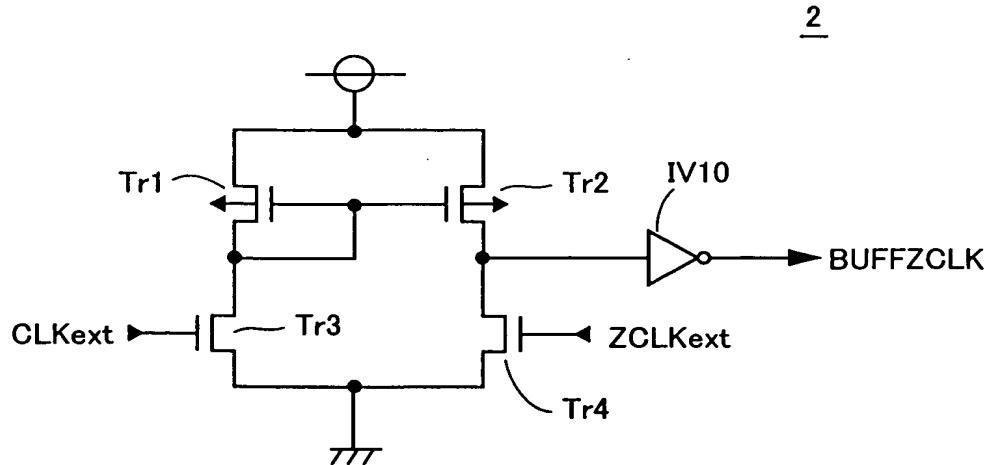


FIG.33

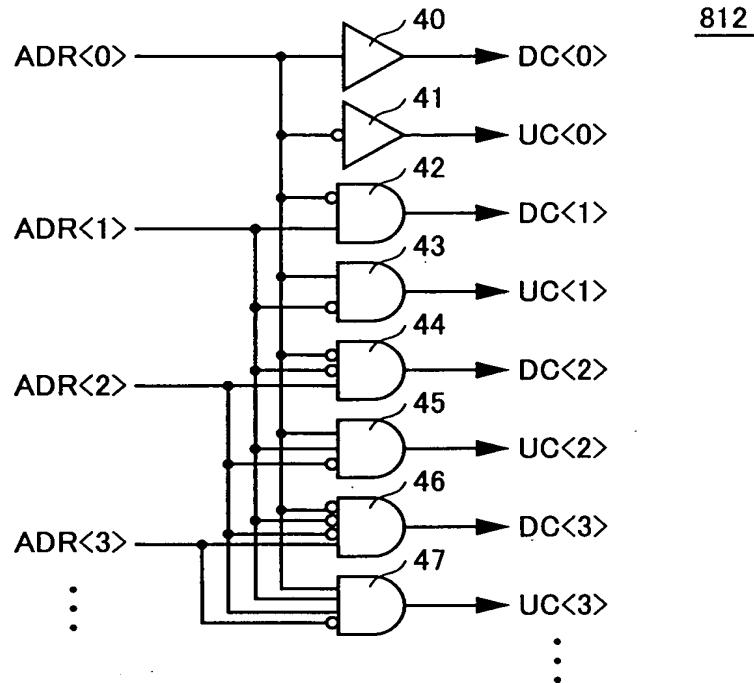


FIG.34

